

What is claimed is:

1. A method for reproducing contents information in an interactive optical disc device, comprising the steps of:

5 a) synchronizing and reproducing data read from an interactive optical disc and contents information sent and downloaded from a contents provider server connected via the Internet;

 b) if the sending of said contents information from said contents provider server is suspended or delayed, generating a command for requesting re-sending of specific contents
10 information, based upon information about a size of said downloaded contents information, and sending the generated command to said contents provider server; and

 c) reproducing said specific contents information re-sent from said contents provider server in response to said command together with data read from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

15 2. The method as set forth in claim 1, wherein said contents information size information is information about an offset of contents information downloaded into a buffer memory of said interactive optical disc device.

20 3. The method as set forth in claim 2, wherein said specific contents information whose re-sending is requested is contents information subsequent to said offset of said contents information downloaded into said buffer memory.

4. The method as set forth in claim 1, wherein said command for requesting the re-sending of said specific contents information includes a parameter, said parameter being the size of said downloaded contents information.

5 5. The method as set forth in claim 1, wherein said step c) includes the steps of:

c-1) receiving a command for notification of the re-sending of said specific contents information from said contents provider server; and

c-2) after said re-sending notification command is received, reproducing said specific contents information re-sent from said contents provider server together with said data read from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

6. A method for reproducing contents information in an interactive optical disc device, comprising the steps of:

15 a) synchronizing and reproducing data read from an interactive optical disc and contents information sent and downloaded from a contents provider server connected via the Internet;

b) if the sending of said contents information from said contents provider server is suspended or delayed, pausing a data reproducing operation of said interactive optical disc for a predetermined period of time and determining whether there is contents information received over said Internet; and

c) if there is contents information received over said Internet, re-synchronizing and reproducing the received contents information and data read from said interactive optical disc.

7. The method as set forth in claim 6, wherein said step b) includes the steps of:

b-1) if the sending of said contents information from said contents provider server is suspended or delayed, determining whether a size of contents information downloaded into a buffer memory of said interactive optical disc device and not reproduced yet is below a predetermined reference value;

b-2) automatically pausing the data reproducing operation of said interactive optical disc if the size of said contents information downloaded into said buffer memory and not reproduced yet is below said predetermined reference value; and

b-3) determining whether there is contents information received over said Internet.

8. The method as set forth in claim 7, wherein said step c) includes the step of, if a size of contents information received over said Internet, downloaded into said buffer memory and not reproduced yet becomes greater than or equal to said predetermined reference value, automatically re-synchronizing and reproducing the received contents information and said data read from said interactive optical disc.

9. The method as set forth in claim 6, wherein said step c) includes the step of resuming the paused data reproducing operation of said interactive optical disc if there is no contents information received over said Internet even after said predetermined time period has elapsed.

10. The method as set forth in claim 9, wherein the resumed data reproducing operation of said interactive optical disc is performed to reproduce only said data read from said

interactive optical disc.

11. A method for reproducing contents information in an interactive optical disc device, comprising the steps of:

5 a) synchronizing and reproducing data read from an interactive optical disc and contents information sent and downloaded from a contents provider server connected via the Internet;

b) if the sending of said contents information from said contents provider server is suspended or delayed, generating a command for requesting re-sending of specific contents
10 information, based upon a counted contents information synchronization value, and sending the generated command to said contents provider server; and

c) reproducing said specific contents information re-sent from said contents provider server in response to said command together with data read from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

15 12. The method as set forth in claim 11, wherein said counted contents information synchronization value is a value obtained by counting the number of synchronizations between said data read from said interactive optical disc and said contents information downloaded from said contents provider server.

20 13. The method as set forth in claim 11, wherein said step b) includes the steps of:
b-1) checking said counted contents information synchronization value if the sending of said contents information from said contents provider server is suspended or delayed;

b-2) calculating a re-synchronizable contents information synchronization value based upon said counted contents information synchronization value; and

b-3) generating a command for requesting re-sending of specific contents information corresponding to the calculated synchronization value and sending the generated command to
5 said contents provider server.

14. The method as set forth in claim 13, wherein said command for requesting the re-sending of said specific contents information includes a parameter, said parameter being said re-synchronizable contents information synchronization value.

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15. The method as set forth in claim 13, wherein said re-synchronizable contents information synchronization value is calculated with reference to a bandwidth of a current network bit rate.

15 16. The method as set forth in claim 11, wherein said step c) includes the steps of:

c-1) receiving a command for notification of the re-sending of said specific contents information from said contents provider server; and

c-2) after said re-sending notification command is received, reproducing said specific contents information re-sent from said contents provider server together with said data read
20 from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

17. The method as set forth in claim 16, wherein contents information received before

said command for notification of the re-sending of said specific contents information is received from said contents provider server is discarded.

18. A method for reproducing contents information in an interactive optical disc device,
5 comprising the steps of:

a) synchronizing and reproducing data read from an interactive optical disc and contents information sent and downloaded from a contents provider server connected via the Internet;

b) if the sending of said contents information from said contents provider server is
10 suspended or delayed, generating a command for requesting re-sending of specific contents information, based upon offset information of said data read from said interactive optical disc, and sending the generated command to said contents provider server; and

c) after a predetermined period of time has elapsed, reproducing said specific contents information re-sent from said contents provider server in response to said command together
15 with data read from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

19. The method as set forth in claim 18, wherein said data offset information is playback time information of data read from said interactive optical disc and being currently
20 reproduced in a state of not being synchronized with said downloaded contents information.

20. The method as set forth in claim 18, wherein said command for requesting the re-sending of said specific contents information includes a parameter, said parameter being

said offset information.

21. The method as set forth in claim 18, wherein contents information received until said predetermined time period elapses is discarded.

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22. The method as set forth in claim 21, wherein said step c) includes the steps of:

c-1) receiving a command for notification of the re-sending of said specific contents information from said contents provider server;

c-2) reproducing only said data read from said interactive optical disc for said
10 predetermined time period after said re-sending notification command is received; and

c-3) after said predetermined time period has elapsed, reproducing said specific contents information re-sent from said contents provider server together with said data read from said interactive optical disc while re-synchronizing it with said data read from said interactive optical disc.

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23. The method as set forth in claim 18, wherein said contents information sent from said contents provider server is audio data, and said data read from said interactive optical disc includes video data.

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24. The method as set forth in claim 11, wherein said contents information sent from said contents provider server is audio data, and said data read from said interactive optical disc includes video data.

25. The method as set forth in claim 6, wherein said contents information sent from said contents provider server is audio data, and said data read from said interactive optical disc includes video data.

5 26. The method as set forth in claim 1, wherein said contents information sent from said contents provider server is audio data, and said data read from said interactive optical disc includes video data.

10 27. A method for providing contents information in a contents provider server,
comprising the steps of:
a) sequentially sending contents information whose sending is requested by an interactive optical disc device connected via the Internet;
b) if the sending of said requested contents information is suspended or delayed,
receiving a command, while including a parameter which is information regarding specific
15 contents information, for requesting re-sending of said specific contents information, from said interactive optical disc device; and
c) re-sending said specific contents information to said interactive optical disc device in response to said command.

20 28. The method as set forth in claim 27, wherein said sent contents information is audio data to be reproduced synchronously with video data read from an interactive optical disc in said interactive optical disc device.

29. The method as set forth in claim 27, wherein said information regarding said specific contents information is any one of information about a size of contents information downloaded by said interactive optical disc device, a synchronization value of contents information to be reproduced re-synchronously with data read from an interactive optical disc, or an offset of data read from said interactive optical disc and to be reproduced while being re-synchronized with said specific contents information requested to be re-sent.

30. The method as set forth in claim 27, wherein said step c) includes the steps of:

c-1) seeking a position of data corresponding to said information regarding said specific contents information;

c-2) sending a command for notification of the re-sending of said specific contents information to said interactive optical disc device; and

c-3) reading said specific contents information at said position and re-sending it to said interactive optical disc device.